



Groundwater Cleanup Begins at Main Installation

May 2006 — During the week of May 1, the Memphis Depot Base Realignment and Closure Cleanup Team and its environmental contractors begin remedial action initiatives to treat affected groundwater in the shallow aquifer beneath the Main Installation (MI).

As outlined in the MI Record of Decision (ROD), the approved remedy for groundwater includes Enhanced Bioremediation Treatment (EBT), Monitored Natural Attenuation (MNA), and land-use controls to prevent future exposure to affected groundwater, which is not a source of drinking water in Memphis/Shelby County.

The Defense Logistics Agency (DLA), U.S. Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation (TDEC) will review the effectiveness of this remedy at five-year intervals to ensure the site continues to be safe for future use.

The environmental contractors will prepare an Interim Remedial Action Completion Report (IRACR) after the EBT injection system has been constructed, the first year of injections have been completed, and EBT and MNA have been determined to be operating properly and successfully. The report must be reviewed and approved by DLA, EPA and TDEC. The approved final IRACR will be placed in the Depot's Information Repositories. The Notice of Land Use Restrictions was recorded in the Permanent Record Archives of the Office of the Shelby County Register on January 26, 2005 and is available for public review online in the Administrative Record.

The Main Installation ROD, Remedial Design and Remedial Action Work Plan are available for public review in the Depot's Information Repositories located at the Cherokee Branch Library and the Memphis Depot Business Park.

Enhanced Bioremediation Treatment (EBT)

Enhanced Bioremediation Treatment (EBT) is being used to treat groundwater containing solvents in the shallow aquifer beneath the MI. EBT speeds up a natural process that exists in the environment. Scientists have discovered there are naturally occurring organisms present in the environment that can help to break down chlorinated solvents in the groundwater, and turn them into safe, natural compounds. This process is known as bioremediation.

Continued on page 2...

During a year-long pilot study completed in 2003, the Depot's environmental team set up two test sites where organic nutrients were injected into the groundwater. Vegetable oil was used at one site and sodium lactate was used at the other to compare the effectiveness of the substances. The results of the study showed that multiple injections of sodium lactate, a common food-grade preservative, will be the most effective solution for treating solvents in the shallow aquifer beneath the MI.

EBT will be used in two areas where concentrations of solvents are the highest. In the southwest corner of the MI (Treatment Area 1), 37 injection wells will be used to introduce sodium lactate into the groundwater. In the southeast corner (Treatment Area 2), 12 injection wells will be used.

Construction of the injection systems is scheduled to be completed in October 2006, immediately followed by injections of sodium lactate. The injections are planned for two years and will occur bi-weekly during the first year and monthly during the second year. The cleanup goals in the EBT areas are expected to be achieved by the end of the second year.

Monitored Natural Attenuation (MNA)

Monitored Natural Attenuation (MNA) is being used to treat groundwater containing low levels of solvents or Chlorinated Volatile Organic Compounds (CVOCS) in the shallow aquifer beneath the MI. MNA will complement the enhanced bioremediation being used in areas where the shallow aquifer has higher concentrations of solvents.

Natural attenuation relies on natural processes to clean up or 'attenuate' substances detected in soil and groundwater. MNA makes use of natural processes to reduce the concentration and amount of compounds in groundwater. MNA may improve environmental conditions in several ways: breaking down chemicals into individual components through biodegradation; reducing their concentration through dilution, dispersion or evaporation; or binding them to soil through absorption so that the compounds do not spread or move off site. The cleanup goals in the MNA areas are expected to be achieved after eight years.

For more information about these remedial action initiatives, please contact the Depot's Community Relations Office at (901) 774-3683.